1. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-13x^2 + 9x + 5 = 0$$

A. $x_1 \in [-14.4, -11.6]$ and $x_2 \in [3.7, 6.6]$

B. $x_1 \in [-2.9, -0.7]$ and $x_2 \in [-0.8, 0.7]$

C. $x_1 \in [-0.9, 0.2]$ and $x_2 \in [0.9, 2.7]$

D. $x_1 \in [-18.2, -17.8]$ and $x_2 \in [16.8, 20.5]$

E. There are no Real solutions.

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2. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$81x^2 - 81x + 20$$

A. $a \in [25.5, 30.5]$, $b \in [-10, 0]$, $c \in [2.3, 5]$, and $d \in [-8, -2]$

B. $a \in [8.6, 10.5]$, $b \in [-10, 0]$, $c \in [8.6, 10.9]$, and $d \in [-8, -2]$

C. $a \in [2.7, 4.5]$, $b \in [-10, 0]$, $c \in [26.3, 29.7]$, and $d \in [-8, -2]$

D. $a \in [0.7, 2.2]$, $b \in [-51, -44]$, $c \in [-2.6, 2.1]$, and $d \in [-38, -33]$

E. None of the above.

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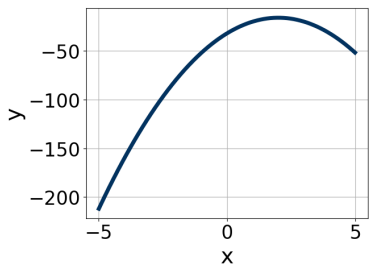
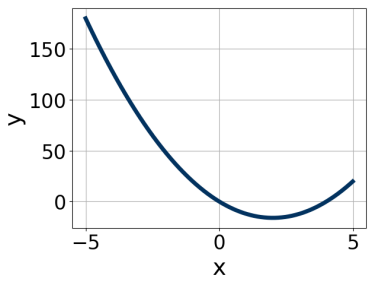
3. Graph the equation below.

$$f(x) = -(x + 2)^2 - 16$$

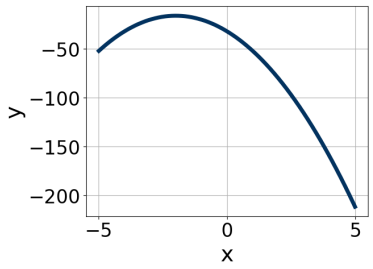
A.



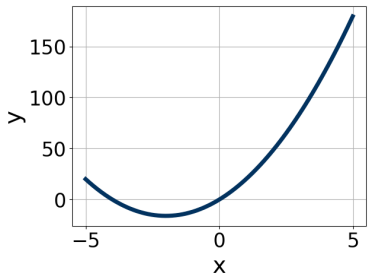
B.



C.



D.



E. None of the above.

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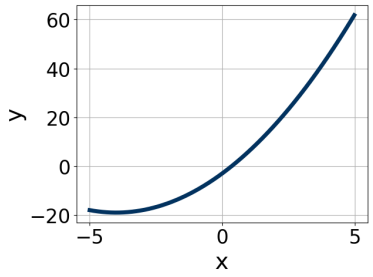
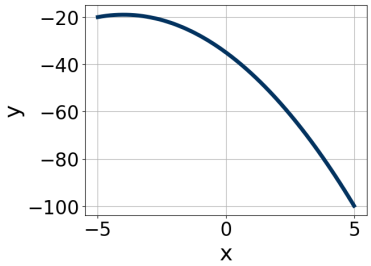
4. Graph the equation below.

$$f(x) = -(x+4)^2 - 19$$

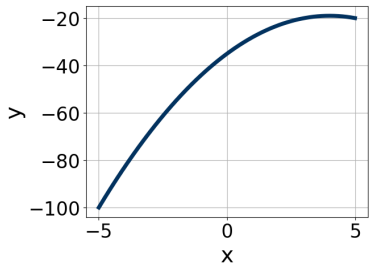
A.



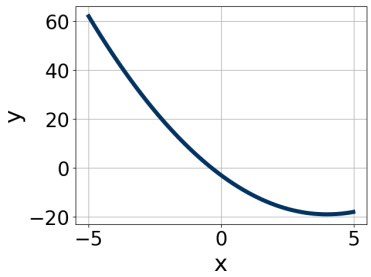
C.



B.



D.



E. None of the above.

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5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-14x^2 - 12x + 7 = 0$$

A. $x_1 \in [-6.23, -5.12]$ and $x_2 \in [16.63, 17.76]$

B. $x_1 \in [-1.75, -0.87]$ and $x_2 \in [0.18, 0.63]$

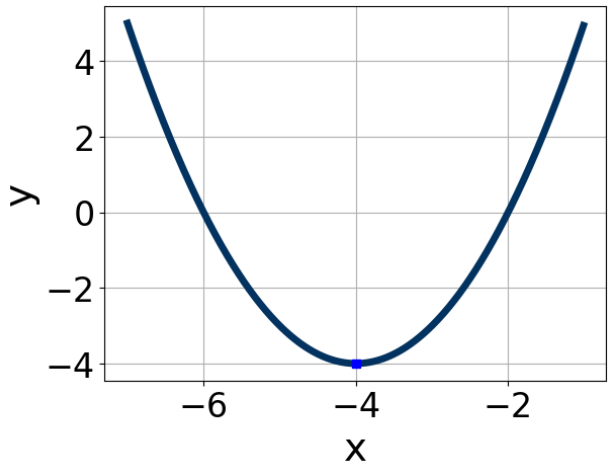
C. $x_1 \in [-24.6, -23.16]$ and $x_2 \in [22.45, 24.24]$

D. $x_1 \in [-0.6, 0.01]$ and $x_2 \in [1.13, 1.46]$

E. There are no Real solutions.

---

6. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.1, 0.1]$, $b \in [-12, -5]$, and $c \in [-22, -19]$

B. $a \in [0.5, 1.2]$, $b \in [6, 9]$, and $c \in [9, 13]$

C. $a \in [-1.1, 0.1]$, $b \in [6, 9]$, and $c \in [-22, -19]$

D. $a \in [0.5, 1.2]$, $b \in [-12, -5]$, and $c \in [9, 13]$

E. $a \in [0.5, 1.2]$, $b \in [-12, -5]$, and $c \in [20, 22]$

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 47x + 36 = 0$$

A. $x_1 \in [-13, -7.5]$ and $x_2 \in [-0.44, -0.12]$

B. $x_1 \in [-29.6, -26.2]$ and $x_2 \in [-20.19, -19.93]$

C. $x_1 \in [-2.2, 1.8]$ and $x_2 \in [-1.53, -1.1]$

D. $x_1 \in [-4.6, -2.5]$ and $x_2 \in [-1.03, -0.78]$

E. $x_1 \in [-7.8, -3.4]$ and $x_2 \in [-0.49, -0.4]$

---

8. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 + 60x + 25$$

A. $a \in [10.5, 12.4]$, $b \in [4, 7]$, $c \in [2.19, 3.64]$, and $d \in [1, 7]$

B. $a \in [1.7, 5.9]$, $b \in [4, 7]$, $c \in [15.97, 19.02]$, and $d \in [1, 7]$

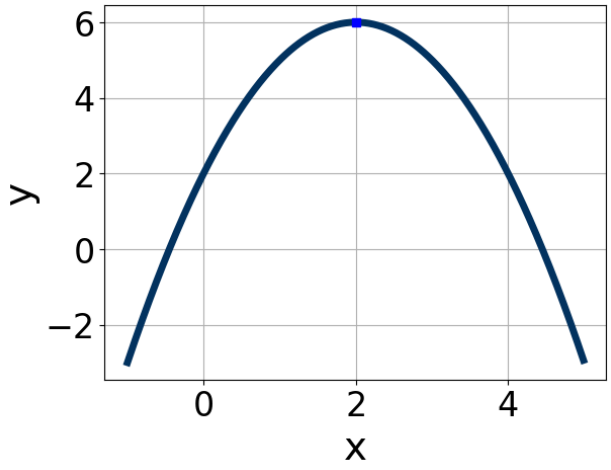
C. $a \in [0.9, 1.1]$, $b \in [27, 35]$, $c \in [0.58, 2.46]$, and $d \in [25, 33]$

D. $a \in [3.9, 6.8]$, $b \in [4, 7]$, $c \in [5.92, 6.33]$, and $d \in [1, 7]$

E. None of the above.

---

9. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.8, 2.5]$, $b \in [-4, -1]$, and $c \in [10, 13]$

B. $a \in [-1.3, -0.7]$, $b \in [2, 6]$, and $c \in [0, 3]$

C. $a \in [0.8, 2.5]$, $b \in [2, 6]$, and $c \in [10, 13]$

D. $a \in [-1.3, -0.7]$, $b \in [-4, -1]$, and $c \in [0, 3]$

E. $a \in [-1.3, -0.7]$, $b \in [-4, -1]$, and $c \in [-12, -8]$

---

10. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 15x - 54 = 0$$

A. $x_1 \in [-6.39, -4.49]$ and $x_2 \in [0.33, 0.4]$

B. $x_1 \in [-30.32, -28.53]$ and $x_2 \in [44.96, 45.11]$

C. $x_1 \in [-0.41, 0.46]$ and $x_2 \in [5.38, 5.41]$

D. $x_1 \in [-1.92, -0.86]$ and $x_2 \in [1.7, 1.91]$

E. $x_1 \in [-4.03, -2.02]$ and $x_2 \in [0.49, 0.71]$
